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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,344	12/23/2003	Kazutaka Inukai	12732-201001 / US6877	4702
26171	7590	08/04/2006	EXAMINER	
FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			WU, XIAO MIN	
			ART UNIT	PAPER NUMBER
			2629	

DATE MAILED: 08/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/743,344

Applicant(s)

INUKAI, KAZUTAKA

Examiner

XIAO M. WU

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4, 19, 22, 25, 28, 34 and 40 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-18, 20, 21, 23, 24, 26, 27, 29-33, 35-39 and 41-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>F2704, 9-13-04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5-10, 17-18, 20-21, 23-24, 26-27, 29-33, 35-39, 41-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Te Winkel et al. (US Patent No. 3,766,543).

As to claim 1, Tel Winkel discloses an electronic circuit (Fig. 5) characterized by comprising: a driving element including a plurality of transistors (S41, S42, S43, Fig. 5); wherein the plurality of transistors (S41, S42, S43, Fig. 5) is connected in series when inputting current (e.g. the transistors S41, S42 and S43 is connected in series when inputting current Ib, 2Ib and 4 Ib) and the plurality of transistors (S41, S42, S43, Fig. 5) is connected in parallel when outputting current (e.g. the output current I-Ib of transistor S41, output current 2I-2Ib of the transistor S42 and the output current 4I-4Ib of the transistor S43 is connected n parallel as shown in Fig. 5).

As to claim 2, Tel Winkel discloses an electronic circuit (Fig. 5) characterized by comprising: a driving element including a plurality of transistors (S41, S42, S43, Fig. 5); wherein the electronic circuit has means to switch (S41, S42, S43) between a series connection state (e.g.. S41, S42, S43 in series connection when inputting current) and a parallel connection state of the plurality of transistors (e.g. S41, S42 and S43 in parallel connection when outputting current);

and amplifies an inputted current for output (e.g. the output current is $8I$ which is greater than any one of the input current).

As to claim 3, Tel Winkel discloses an electronic circuit (Fig. 6) which amplifies an inputted current when outputted, characterized by comprising: a driving element including a plurality of transistors (T61, T62); and a switch (S67), wherein each gate of the plurality of transistors is connected to each other (e.g. the gate of the transistor T61 is connected to the gate of the transistor T62); at least one of a source or a drain of each of the plurality of transistors is connected to a source or a drain of another transistor of the plurality of transistors (e.g. the source of the transistor T61 is connected to the source of the transistor T62); and the plurality of transistors (T61, T62) can be connected either in series or parallel by switching over the switch (e.g. when the transistor S67 is turned "off", the transistor T61 and T62 are connected in series, and when the transistor S67 is turned "on", the transistors T61 and T62 are connected in parallel with a combined current output).

As to claims 5, 17-18, Te Winkel discloses that the plurality of transistors is p-channel type (see Fig. 5).

As to claims 6, 20-21, Te Winkel discloses that the transistors are same type of the transistor. Therefore, the channel lengths, channel widths and insulating film thicknesses of the plurality of transistors are all equal.

As to claims 7, 23-24, Te Winkel discloses that the plurality of transistors are TFTs.

As to claims 8, 10, 26-27, 29-31, Te Winkel discloses that the electronic circuit is an integrated circuit.

As to claims 9, 32-33, 35-37, it is inherent that the TFTs are formed over a glass

substrate.

As to claims 38-39, 41-43, Te Winkel discloses the electronic circuit is used for an electronic device such as a D/A converter.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11-16, 45-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Te Winkel et al. (US Patent No. 3,766,543) in view of Kitahara et al. (US Patent No. 6,586,888).

As to claims 11-15, 44-45, note the discussion of claims 1 and 3 above. It is noted that Te Winkel discloses the current divider can be used in a D/A converter (col. 1, lines 23-30) but fails to mention that the D/A converter is used in a display device. However, using a D/A converter in a display system is well known in the art such as taught by Kitahara. As shown in Fig. 8, Kitahara discloses an organic EL display device including a D/A converter (91) for use in a column line current driving circuit. It would have been obvious to one of ordinary skill in the art to have used the D/A converter of Te Winkel in a display device as suggested by Kitahara so as to convert digital input data to a suitable current signal for driving the display pixel elements.

As to claims 16, 46, it is well known in the art that a personal computer comprises a keyboard and a pointing mouse for inputting data and controlling a cursor.

Allowable Subject Matter

5. Claims 4, 19, 22, 25, 28, 34 and 40 are allowed.

6. The following is a statement of reasons for the indication of allowable subject matter:

None of the prior art, alone or in combination, teaches or fairly suggests the limitation of “a first and a second switch, wherein gates of the n transistors are connected electrically; either of sources or drains of the n transistors are electrically connected to the first switch respectively; another of sources or drains of the n transistors are electrically connected to the second switch respectively; when a current is inputted to the electronic circuit, as for a kth transistor ($k=2$ to less than n) in the n transistors, a current flows through a $(k-1)$ th transistor to a $(k+1)$ th transistor via the kth transistor; and when the current is outputted in the electronic circuit, as for the kth transistors, the current flows from the side connected to the second switch to the side connected to the first switch” as required in independent claim 4.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The US Patent No. 4,847,567 is cited to teach an amplifier circuit including a plurality of transistors.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to XIAO M. WU whose telephone number is 571-272-7761. The examiner can normally be reached on 6:30 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHARD HJERPE, can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

x.w.

August 1, 2006



XIAO M. WU
Primary Examiner
Art Unit 2629